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EXAMINER	
SWITZER, JULIET CAROLINE	
ART UNIT	**PAPER NUMBER**
1634	

DATE MAILED: 01/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/057,275	COLEMAN ET AL.	
	Examiner	Art Unit	
	Juliet C. Switzer	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 October 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18,20,23 and 62* is/are pending in the application.

4a) Of the above claim(s) *1,2,11,14-18,20 and 23* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *3-10, 12-13, and 62* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/22/05 has been entered.

2. This action is written in response to applicant's correspondence submitted 8/22/05. Claims 1-18, 20, 23, and 62 are pending. Claims 1-2, 11, 14-18, 20, and 23 are withdrawn from prosecution as being drawn to non-elected inventions. In the paper filed 8/22/05, claims 3, 9, and 62 were amended. Claims 3-10, 12-13, and 62 are under examination herein. Applicant's amendments and arguments have been thoroughly reviewed, but are not persuasive for the reasons that follow. Any rejections not reiterated in this action have been withdrawn. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Priority

3. The currently pending claims have priority in the application as originally filed and in the parent application. Thus, for this office action the effective filing date of the pending claims is 2/17/95.

Claim Rejections - 35 USC § 112- New Matter

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

(C) The rejection of claims 3, 6, 7, 8, 9, 10, 62, 63, 64, and 65 are rejected under 35 U.S.C. 112, first paragraph, as containing new matter (referring to the "at least 97% sequence identity" language) is WITHDRAWN in view of the cancellation of this language from the claims.

Claim Rejections - 35 USC § 101/112 1st, Lack of Utility

5. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 3-10, 12, 13, and 62 are rejected under 35 U.S.C. 101 because the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility.

The claims are drawn to isolated polynucleotides encoding instant SEQ ID NO: 4 or a variety of variants and/or fragments of instant SEQ ID NO: 4 which have "chemokine activity" or which are "immunogenically active fragments." The claims further recite constructs comprising these nucleic acids, including vectors and host cells/organisms, as well as methods for producing polypeptides which utilize these constructs.

The specification teaches that instant SEQ ID NO: 3 encodes instant SEQ ID NO: 4, a polypeptide referred to in the specification as PANEC-2. The specification teaches that PANEC-2 is a human pancreatic protein that is a member of the C-C chemokine family, based on the fact

that the molecule was isolated from a library obtained from human pancreatic tissue and based on homology of SEQ ID NO: 4 to other C-C chemokines.

The specification asserts that PANEC-2 is specifically expressed in pancreas, and because of this PANEC-2 nucleic acids are useful in assays based on chemokine production in cases of inflammation or disease affecting the pancreas (p. 8). While asserted utility is specific, it is not substantial. It is not substantial because further experimentation would be required to reasonably confirm that in fact a real world utility exists wherein these molecules can be used in diagnostics.

Chemokines are chemoattractant cytokines. In a 1994 review of chemokines, Schall *et al.* teach that "Although the properties of these molecules have only recently begun to be elucidated, the bulk of the evidence to date suggests that the chemokines function as regulators of inflammatory and immunoregulatory processes, particularly through their leukocyte chemoattractant effects (p. 4, third paragraph, as cited in the IDS)." A "leukocyte" is a white blood cell, and includes among its members monocytes, neutrophils, basophils, eosinophils, and lymphocytes, each of which function differently within the body's immune system. Furthermore, Schall *et al.* provide a table which summarizes different sources and targets for the known C-C type chemokines (Table V). Some of these, for example MCP-1, can be isolated from many tissues, while others can be isolate from only T cells (for example I-309). Likewise, with regard to targets, some of the C-C type chemokines target a wide variety of cells, for example MIP-1α targets a variety of leukocytes as well as stem cells, osteoclasts, and hypothalamus. And for some the target is yet unknown, such as the murine C-C chemokine C10. Furthermore, Schall *et al.* teach that even chemokines with a great deal of structural homology

(70%) demonstrate distinct specificities for their cellular targets (p. 16, first full paragraph), and that attempts to even elucidate the targets of chemokines contain "pitfalls of interpretation (p. 23, second paragraph)." The pancreas is a complex organ with many cell types- the specification does not provide any information as to what type of cells produce or are targeted by PANEC-2. Thus, in the instant case, while applicant may have identified a C-C type chemokine, this designation does not speak specifically to the functioning of the molecule with regard to target, and further experimentation (which is unpredictable) would be required to determine such a target. Without knowledge of such a target, it would be difficult to utilize the instant molecule in diagnostics or prognostics because it is unknown what the presence of the molecule would indicate or suggest.

Furthermore, the instant specification asserts that the PANEC-2 molecule is "specifically" expressed in pancreas and can therefore be used in assays to detect diseases or inflammation of the pancreas. However, the specification does not provide any evidence of this specific expression, only teaching that the molecule was isolated from a human pancreatic cDNA library, but never assaying additional tissue types to determine the specificity of expression. Accordingly, the assertion that PANEC-2 is "specifically" expressed in the pancreas is not substantial. All that can be concluded based upon the specification as filed is that PANEC-2 is expressed in pancreas, not that such expression is specific to pancreas. Indeed, the post-filing date art suggests that the PANEC-2 molecule (SEQ ID NO: 4) is expressed in a wide variety of tissues, including lymph nodes, appendix, heart, small intestine, colon, and spleen (Nagira *et al.*, 1997, figure 3). This reference supports the position that at the time the invention was made

further experimentation would have been necessary to even reasonably confirm the expression specificity of the instant molecule.

The specification does not elucidate or demonstrate any particular target for the instantly disclosed chemokine, but instead teaches that excessive expression of PANEC-2 "can" lead to activation of monocytes, macrophages, basophils, eosinophils, T lymphocytes, and/or other cells which respond to chemokines. The language of the specification appears to be prophetic, and suggests that PANEC-2 may activate any one of these or some other undisclosed molecule, but it is equally suggestive that it may not activate any one of these. This is not a definitive assertion of functionality or utility. It is also noted that chemokines are particularly discussed in the specification at several citations regarding their broad activities. For example, on pages 2-3, various chemokines are described with varying activities discussed. Particular attention is drawn to page 3, line 9, wherein it is stated that chemokine activities demonstrate a high degree of target cell specificity. This statement is significant in that the subject matter of the instant claims is "not" characterized as target cell specificity other than the generic pancreas location thereof. Numerous activities are carried out by the pancreas, including numerous non-chemokine activities, and thus this pancreas specificity is generic in nature, especially since the chemokines encoded by the instantly claimed nucleic acids have no asserted correlation to any particular disease or illness, but rather only speculated as being involved in a long list of diseases or illnesses. Thus, the asserted utility of the claimed PANEC-2 encoding nucleic acids as a tool in diagnostics is not substantial because the specification does not teach or suggest the "inflammatory or disease" affecting the pancreas that can be identified using these molecules. Instead, the disclosure of the specification is an invitation to the skilled artisan to attempt to

discover such a disease that is associated with the instantly claimed nucleic acids, and can thus be detected in a diagnostic which utilizes these nucleic acids. Thus, "real world" disease or illness condition correlation is absent for the claimed subject matter, and the asserted utility of the instant nucleic acids in diagnostic applications is not substantial.

The specification further asserts a number of additional possible utilities for the claimed nucleic acids, including as hybridization probes, as oligomers for PCR, use for chromosome and gene mapping, use in the recombinant production of PANEC-2, and use in the generation of anti-sense DNA or RNA, their chemical analogs, and the like (p. 8, third full paragraph). These utilities are not specific because they can generally be applied to any nucleic acid that encodes a protein, of which there are millions of possibilities. Further, these utilities are not substantial. For example, a nucleic acid may be utilized to obtain a protein. The protein could then be used in conducting research to functionally characterize the protein. The need for such research clearly indicates that the protein and/or its function is not disclosed as to a currently available or substantial utility. A starting material that can only be used to produce a final product does not have substantial asserted utility in those instances where the final product is not supported by a specific and substantial utility. In this case none of the proteins that are to be produced as final products resulting from processes involving claimed nucleic acid have asserted or identified specific and substantial utilities. The research contemplated by applicants to characterize potential protein products, especially their biological activities, does not constitute a specific and substantial utility. Identifying and studying the properties a protein itself or the mechanisms in which the protein is involved does not define "real world" context or use. Similarly, the other listed and asserted utilities as summarized above or in the instant

specification are neither substantial nor specific due to being generic in nature and applicable to a myriad of such compounds.

Neither the specification as filed nor any art of record discloses or suggests any property or activity for the nucleic acid and/or protein compounds such that another non-asserted utility would be well established for the compounds. In the instant specification in the fourth full paragraph on page 4, applicants set forth a research proposal for "new diagnostic techniques" and for "use in the development of effective therapies." This statement in itself appears to be an invitation to conduct further research to reasonably confirm that a specific and substantial utility exists for the claimed molecules. It is noted that a number of examples have been set forth for the basic isolation and characterization of PANEC-2 starting in the instant specification on pages 13-15. From pages 16-26 of the specification a review of generic methods are given with only speculation as to what specific or substantial effects are connected to PANEC-2. These are also clearly research proposals which lack patentable utility. In summary, the instant invention, as filed, has not been set forth with a patentable utility due to a lack of specific, substantial, or well established utility.

Claims 1-10, 12, 13, 60, 61, and 62-65 are also rejected under 35 U.S.C. 112, first paragraph. Specifically, since the claimed invention is not supported by either a specific and substantial asserted utility or a well established utility for the reasons set forth above, one skilled in the art clearly would not know how to use the claimed invention.

Claim Rejections - 35 USC § 112-Written Description

7. Claims 3, 6-8, 9, 12, 13, and 62 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Rejected claim 3 is drawn to isolated polynucleotides encoding a polypeptide consisting of the amino acid sequence of SEQ ID NO: 4, or a polypeptide that is a variant of SEQ ID NO: 4, wherein said variant (i) "has" an insertion or deletion of 1-5 amino acids as compared to SEQ ID NO: 4, or (ii) "has" one amino acid substitution as compared to SEQ ID NO: 4, or both (i) and (ii) , and the variant has chemokine activity, or a biologically active fragment of a polypeptide that consists essentially of the amino acid sequence SEQ ID NO: 4, wherein said fragment has chemokine activity and is at least five amino acids in length, or an immunogenic fragment of a polypeptide that consists of the amino acid sequence of SEQ ID NO: 4, wherein the fragment is capable of generating an antibody that specifically binds to the polypeptide of SEQ ID NO: 4, and the immunogenic fragment possesses biological activity.

The subject matter of part (a) is adequately described.

The subject matter of part (b) includes nucleic acids that encode variants of SEQ ID NO: 4 which are not described in the specification, including nucleic acids which encode molecules from other species of related animals, allelic variants, splice variants and the like. The claims are sufficiently broad so as to encompass any molecule that encodes a polypeptide with "chemokine acitivty" that has any number of insertions or deletions relative to SEQ ID NO: 4, since the claim is drawn using open language and requires the recited changes but does not limit the number of additional possible changes. For example, a molecule that differs from SEQ ID NO: 4 by four amino acid changes "has" one change, and also "has" additional changes. Further, the claims do

not recite a requisite structure/function relationship between a recited function in the claims and a function of the encoded amino acid. Though the claim recites that the encoded variant must have "chemokine activity" this recitation of function is very broad, as chemokines are known to be active in a variety of ways, as proteins that bind to receptors that then transmit a wide variety of possible signals within a cell. There is no clear relationship between the structure recited in part (b) of the claim and the recited "function."

Considering part (c) the polynucleotide of claim 3, this genus of nucleic acids is also quite broad, because while the claim requires that the encoded fragment be "biologically active" and have "chemokine activity" this could include any number of possible amino acid residue, so long as the encoded polypeptide have at least five residues in common with instant SEQ ID NO: 4. Since these two recited functions are broad in their nature (biological activity encompassing even an activity such as being a substrate for a protease or the ability to raise an antibody), these functions do not help to define the claimed genus. Furthermore, the specification does not discuss which fragments of SEQ ID NO: 4 are essential for the maintenance of "chemokine activity" a fact that is particularly relevant in view of the fact that the specification does not even demonstrate what type of chemokine activity SEQ ID NO: 4 possesses to begin with. Furthermore, the claim is open in nature, requiring only that the claimed polynucleotide encode a fragment of SEQ ID NO: 4 that meets the functional language of the claim, but that polynucleotide could further encode other fragments flanking the fragment of SEQ ID NO: 4, and so the claimed polynucleotide encompasses polynucleotides that encode related chemokines, allelic variants not disclosed, as well as possible splice variants of the disclosed nucleic acid.

Part (d) of claim 3 encompasses any nucleic acid encoding any immunogenically active fragment of SEQ ID NO: 4 wherein the fragment is "capable" of generating an antibody that "specifically binds" to SEQ ID NO: 4. The specification at page 12 teaches that antibodies inherently specifically bind their target as opposed to other target sequences, and so in this case, the language "specifically binds" is quite broad in nature and does not provide a defining characteristic, as any antibody raised by a fragment of SEQ ID NO: 4 would specifically bind some portion of SEQ ID NO: 4. Furthermore, the claim is open in nature, requiring only that the claimed polynucleotide encode a fragment of SEQ ID NO: 4 that meets the functional language of the claim, but that polynucleotide could further encode other fragments flanking the fragment of SEQ ID NO: 4, and so the claimed polynucleotide encompasses polynucleotides that encode related chemokines, even polypeptides that are not chemokines but share some amino acid sequence in common with SEQ ID NO: 4, allelic variants not disclosed, as well as possible splice variants of the disclosed nucleic acid. The genus of nucleic acids encompassed within this claim includes a wide variety of polynucleotides encoding amino acid sequences that are not described.

Claims 6-8 are drawn to constructs and methods that utilize or comprise nucleic acids of claim 3.

Claim 9 is an independent claim and encompasses fragments and variants of SEQ ID NO: 4, in particular. The language used in claim 9 is very similar to that used in claim 3, and an analogous analysis applies to the various sections of this claim.

Claim 12 is included in this rejection in view of the recitation in part (b) which requires that the variant polynucleotide of SEQ ID NO: 3 encode "an amino acid sequence of SEQ ID NO: 4." The use of this broad language (specifically the use of the indefinte article "an")

encompasses any polynucleotide that encodes any amino acid sequence from within SEQ ID NO: 4, including as few as one or two amino acids. The genus of molecules contained within this recitation is enormous, including, encoded polypeptides of any function or structure that have minimal structural commonality with instant SEQ ID NO: 4.

Claim 13 claims an isolated polynucleotide comprising at lest 60 contiguous nucleotides of a polynucleotide of SEQ ID NO: 3. Claim 13 is drawn using broad "comprising" language, and encompasses polynucleotide fragments of 60 nucleotides with any potential flanking sequences. The claim has no functional requirement. The claim thus encompasses any number of splice or allelic variants of SEQ ID NO: 3, as well as potential genomic sequences any of which encode molecules with any potential function.

Claim 62 is of the same scope as part (b) of claim 3, and an analogous analysis applies to this claim.

Within the genus of the claimed polynucleotides, the instant specification describes only nucleic acids encoding SEQ ID NO: 4, with a particular example of a nucleic acid comprising instant SEQ ID NO: 3. Molecules that consist of fragments of SEQ ID NO: 3 are also described, as are molecules that encode amino acids sequences consisting of fragments of SEQ ID NO: 4. As discussed, however, the claims encompass any number of variants and sequences related to SEQ ID NO: 3 and encoding polypeptides related to SEQ ID NO: 4 that are not described in the specification. The specification does not provide any guidance as to how SEQ ID NO: 4 can be modified yet retain its "chemokine" activity. One cannot rely on the knowledge within the prior art for making these modifications, because at the time the invention was made, it was known that chemokines had a wide diversity of structure, but it was not known what structure is

"critical" to the functioning of a chemokine. This is particularly problematic in the instant case where the actual function of SEQ ID NO: 4 is unknown. That is, though applicant teaches that SEQ ID NO: 4 might attract some molecule, it is not known what molecule. Therefore, if changes were made to SEQ ID NO: 4 one would have a difficult if not impossible time determining whether the newly provided molecule has the same unknown function as SEQ ID NO: 4. It is noted that in Fiers v. Sugano (25 USPQ2d, 1601), the Fed. Cir. concluded that

> "...if inventor is unable to envision detailed chemical structure of DNA sequence coding for specific protein, as well as method of obtaining it, then conception is not achieved until reduction to practice has occurred, that is, until after gene has been isolated...conception of any chemical substance, requires definition of that substance other than by its functional utility."

In the instant application, only the nucleic sequence of the disclosed SEQ ID NO: 3 and encoding SEQ ID NO: 4 are described. Also, in Vas-Cath Inc. v. Mahurkar (19 USPQ2d 1111, CAFC 1991), it was concluded that:

> "...applicant must also convey, with reasonable clarity to those skilled in art, that applicant, as of filing date sought, was in possession of invention, with invention being, for purposes of "written description" inquiry, whatever is presently claimed."

In the application at the time of filing, there is no record or description which would demonstrate conception of any nucleic acids encoding proteins modified by addition, insertion, deletion, substitution or inversion with the disclosed SEQ ID N0: 4 therefore possessing one or more amino acid differences such that a different amino acid sequence is encoded which retains same function as SEQ ID NO: 4, which function is not clearly set forth in the specification.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 3, 6-9, 12, and 62 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamagishi et al. (WO 92/19737).

Yamagishi *et al.* teach an isolated nucleic acid encoding a biologically active fragment of a polypeptide that consists of the amino acid sequence of SEQ ID NO: 4 wherein said fragment is has chemokine activity. The specification does not define "chemokine activity." This limitation, broadly interpreted includes any activity that a chemokine would possess, such as the ability to raise an antibody that would bind to a portion of a chemokine. Namely, in their SEQ ID NO: 18, Yamagishi *et al.* teach a polynucleotide that encodes residues 75-79 of instant SEQ ID NO: 4 (see nucleotides numbered 292-306 of the sequence taught in SEQ ID NO: 18). This five amino acid fragment would be immunogenically active, that is able to raise an antibody. The raised antibody would specifically bind to this portion of SEQ ID NO: 4. The specification at page 12 teaches that antibodies inherently specifically bind their target as opposed to other target sequences, and so in this case, the language "specifically binds" is quite broad in nature and essentially applies to any antibody that would bind a target sequence, as any antibody raised by a fragment of SEQ ID NO: 4 would specifically bind some portion of SEQ ID NO: 4. Further, this fragment possesses biological activity insofar as it can raise an antibody, be bound by an antibody or be the substrate for a protease. Yamagishi *et al.* teach that the encoded polypeptide is the chemokine MCP-1. An alignment of the SEQ ID NO: 18 from Yamagishi et

al. and instant SEQ ID NO: 4 is provided at the end of this office action. Thus, the nucleic acid taught by Yamagishi *et al.* meets at least the limitations of claim 3 as recited in part (c) and part (d) and further encodes the polypeptide recited in claim 9(c) and (d).

Regarding part (b) of claim 1 and claim 62, Yamagishi et al. teach an isolated polynucleotide encoding a polypeptide that is a variant of SEQ ID NO: 4, wherein the variant has chemokine activity and has an insertion or deletion of 1-5 amino acids as compared to SEQ ID NO: 4 and has one amino acid substitution. This claim language is set forth using the open phrase "has" which is interpreted to read on any molecule that has the differences mentioned in the claim as well as any additional differences. The molecule taught by Yamagishi et al. has the differences set forth in the claims, as well as additional differences which are permitted by the broadly used claim language.

With regard to claim 6, Yamagishi *et al.* teach recombinant polynucleotides comprising a promoter sequence operably linked to their SEQ ID NO: 18 and, with regard to claims 7 and 8, they teach host cells which are transgenic organisms comprising the recombinant polynucleotides (see Referential Example 1, beginning on page 27). The molecule SEQ ID NO: 18 taught by Yamagishi et al. encodes their SEQ ID NO: 1, which is referred to in the document as MCF(76).

With regard to claim 9, Yamagishi *et al.* teach a method for using the recombinant polynucleotides for producing the polypeptide encoded by their SEQ ID NO: 18, which comprises culturing a cell under conditions suitable for the expression of the polypeptide, and recovering the polypeptide (Example 3, pages 22-24).

Regarding claim 12, Yamagishi et al. teach an isolated polynucleotide which a sequence variant of SEQ ID NO: 3 and which encodes "an amino acid sequence" of SEQ ID NO: 4. The use of the indefinite article "an" is interpreted to require that the claimed variant sequence encode any sequence from within SEQ ID NO: 4. Yamagishi et al. meet this limitation.

Thus, the teachings provided by Yamagishi *et al.* meet all of the limitations of the rejected claims.

Yamagishi et al. aligned to SEQ ID NO: 4 :

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Qy= instant SEQ ID NO: 4; Db= SEQ ID NO: 18 of Yamagishi et al.
Qy          1 MetAlaGlnSerLeuAlaLeuSerLeuLeuIleLeuValLeuAlaPheGlyIleProArg 20
              |||      |||   ||||||      |||:::|||:::   |||      ||||||:::
Db         70 ATGAAAGTCTCTGCCGCCCTTCTGTGCCTGCTGCTCATAGCAGCCACCTTCATTCCCCAA 129

Qy         21 ThrGlnGlySerAspGlyGlyAlaGln----------------------AspCysCys 32
                        |||   ||||||                           ||||||
Db        130 ---------------GGGCTCGCTCAGCCAGATGCAATCAATGCCCCAGTCACCTGCTGT 174

Qy         33 LeuLysTyrSerGlnArgLysIleProAlaLysValValArgSerTyrArgLysGlnGlu 52
                 ::::::   |||||||||      :::   :::   ||||||||||:::
Db        175 TATAACTTCACCAATAGGAAGATCTCAGTGCAGAGGCTCGCGAGCTATAGAAGAATCACC 234

Qy         53 ProSerLeuGlyCysSerIleProAlaIleLeuPheLeuProArgLysArgSerGlnAla 72
              |||      |||         |||::::::|||      :::
Db        235 AGCAGC---AAGTGTCCCAAAGAAGCTGTGATCTTC------AAGACCATTGTGGCCAAG 285

Qy         73 GluLeuCysAlaAspProLysGluLeuTrpValGlnGlnLeuMetGlnHisLeuAspLys 92
              |||:::|||||||||||||||:::   |||||||||      |||   ||||||||||||
Db        286 GAGATCTGTGCTGACCCCAAGCAGAAGTGGGTTCAGGATTCCATGGACCACCTGGACAAG 345

Qy         93 ------------------------------ThrProSerProGln 97
                                            ||||||   |||:::
Db        346 CAAACCCAAACTCCGAAGACTTGAACACTCACTCCACAACCCAAG 390
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Response to Remarks

New grounds of rejection are set forth to address the amendments to the claims.

The **written description rejection** is modified and maintained to address the amended claims. Claim 12 has been added to this rejection to address broad language set forth in section (b) of the claim.

Applicant traverses the rejection beginning on page 12. Applicant argues that because of the redundancy in the genetic code and the teachings of the instant application, a skilled artisan would know what amino acids can be changed within SEQ ID NO: 4 to encode a polypeptide that "corresponds" with SEQ ID NO: 4. This is not persuasive if "corresponds with" means that the two polypeptides have the same function, since the function of SEQ ID NO: 4 is not taught in the specification. The specification asserts that SEQ ID NO: 4 has "chemokine activity," which is a broad statement of functionality that varies among even members of this class of proteins, as discussed in the rejection. There is no identification of a particular structure in the specification that is correlative with this function. The specification teaches at example XII how to screen for various different potential chemo attractant activities, but not which ones are possessed by SEQ ID NO: 4. Applicant is in possession of a molecules (SEQ ID NO: 4) and nucleic acids encoding that molecule which certainly possess a particular activity, but applicants have not disclosed what this activity is. Applicant states that a skilled artisan "would know what amino acid substitutions could be made to SEQ ID NO: 4 so as to preserve the chemokine function of the protein." This statement is not supported by facts or evidence on the record, especially since "the" chemokine function of the protein is unknown.

Applicant argues at page 12, that one could asses the immunogenic or biological activity of fragments of SEQ ID NO: 4. The written description rejection is set forth against these claims insofar as they are not limited to isolated nucleic acids consisting of polynucleotide that encode

amino acids consisting of fragments of SEQ ID NO: 4, but instead include flanking sequences which are not described and lead to the claim encompassing any number of variants as well as genomic sequences, etc.

Therefore, even in view of applicant's remarks, the rejection is MAINTAINED.

The rejection for **lack of utility** is maintained.

Applicant argues that the assertion that the polynucleotides of the claimed invention encode "pancreatic expressed chemokines" is a specific and substantial utility (response page 10, section VI). As discussed in the rejection, the classification of a molecule as a "chemokine" with no further description of the target of the chemokine is not a specific and substantial utility. The specification teaches that excessive expression of PANEC-2 "can" lead to activation of monocytes, macrophages, basophils, eosinophils, T lymphocytes, and/or other cells which respond to chemokines. There is no disclosure that this in fact happens or which of the list of potential targets would be activated. Further with regard to the designation of the molecule as "pancreatic" the specification teaches that the molecule was isolated from a human pancreatic cDNA library, but provides any study of additional tissue types to determine the specificity of expression. Accordingly, the assertion that PANEC-2 is "specifically" expressed in the pancreas is not substantial. All that can be concluded based upon the specification as filed is that PANEC-2 is expressed in pancreas, not that such expression is specific to pancreas.

Applicant refers to the post-filing date art as teaching that the instantly claimed nucleic acid molecules encode a chemokine that is chemotactic for lymphocytes. This assertion is not in the instant specification. The instant specification provides only a laundry list of potential

targets for the encoded chemokine with no further guidance as to which target from the list is the actual target. As plainly stated in MPEP 2164.05(a), the specification must be enabling as of the filing date. In the specification as originally filed, there is an assertion that the claimed nucleic acid "may" encode a polypeptide that could activate one of a list of possible cell types, and that list even includes the open ended designation "or other cells which respond to chemokines." Applicant states at the top of page 11 that Nagira "verifies" that the chemokine is apecifically chemotactic for lymphocytes. Applicant's argument implies that the instant specification teaches this activity. However, it does not specifically teach this activity. Instead, as noted previously, the specification provides a laundry list of molecules which may be attracted to PANEC-2 with no further guidance as to which are relevant to the claimed molecules. This is an invitation to complete further, unpredictable experimentation to determine the function of the encoded molecules. Applicant argues that applicant does not have to show which cells are specifically activated by the chemokine, arguing that the disclosure that the molecule encodes a "chemokine" is sufficient. This is not persuasive for all of the reasons of record, including, particularly because the designation of a molecule as a "chemokine" is a classification within a broad group of molecules with a variety of activities and functions, similar to the designation of a molecule as a "receptor." Without knowing the target cells for the chemokines, one does not know how to use the claimed molecules. Applicant argues that it is sufficient to provide a statement of how the molecule "can" be used instead of providing a clear statement of utility. This is not persuasive, because the suggestions in the specification, as noted by the examiner previously, do not tell one what to do with the claimed molecules or the polypeptides encoded by the claimed molecules. The only invite one to determine what might be done. The examiner is only

requiring the assertion of a specific, substantial, and credible utility, and for the reasons of record as set forth in these arguments and in the rejection of record, the rejection is MAINTAINED.

With regard to the **102(b)** rejection in view of Caput et al. and Hromas et al., the rejections are WITHDRAWN. New grounds of rejection are set forth to address the amended claims.

Conclusion

10. No claims are allowed.

11. Claim 4, 5, and 13 are free of the prior art. These claims are granted priority to the parent application insofar as there is descriptive support in that application for the claims. The prior art does not teach or suggest an isolated polynucleotide encoding SEQ ID NO: 4, and in particular does not teach an isolated polynucleotide comprising instant SEQ ID NO: 3. Further, with regard to claim 13, the prior art does not teach or suggest an isolated polynucleotide comprising at least 60 contiguous nucleotides of SEQ ID NO: 3.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliet C Switzer whose telephone number is (571) 272-0753. The examiner can normally be reached on Monday, Tuesday or Thursday, from 9:00 AM until 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones can be reached by calling (571) 272-0745.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-0507.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Juliet C. Switzer
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Art Unit 1634

January 19, 2006